

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1. (Currently amended) A method for detecting a position of an impulse
2 response in a multipath channel comprising:
3 (a) receiving a transmitted signal as a received signal, the received signal
4 comprising one or more reflected signals and a line-of-sight signal;
5 (b) correlating a representation of the received signal with a pseudo-random
6 number (PN) sequence to produce an evaluation signal, the PN sequence being used to produce
7 the transmitted signal, the evaluation signal comprising a plurality of peak values;
8 (c) identifying a first peak value from among the plurality of peak values;
9 (d) determining a position in the evaluation signal of the first peak value, wherein
10 the position is representative of time;
11 (e) determining a threshold value based on the evaluation signal;
12 (f) comparing the threshold value with one of the peak values to produce a
13 comparison result; and
14 (g) based on the comparison result, determining whether to:
15 produce a new evaluation signal based on the evaluation signal; and
16 repeat the steps (c) - (g) using the new evaluation signal,
17 wherein a plurality of first peak values are accumulated by the repetition of steps
18 (c)-(g),
19 wherein a position of an impulse response corresponds to the first peak value in
20 the plurality of first peak values whose associated time is the earliest[[.]],
21 wherein the first peak value with the earliest time represents the arrival time of the
22 line-of-sight signal.

1 2. (Original) The method of claim 1 wherein the new evaluation signal is
2 produced by subtracting a template signal from the evaluation signal.

1 3. (Original) The method of claim 1 wherein the threshold value is based on
2 the peak values comprising the evaluation signal, exclusive of the first peak value.

1 4. (Original) The method of claim 1 wherein the threshold value is based on
2 a ratio between the first peak value and the other peak values comprising the evaluation signal.

1 5. (Original) Apparatus for identifying a position of an impulse response in a
2 multipath channel comprising:
3 a data processing unit; and
4 a memory component in data communication with the data processing unit, the
5 memory component containing a first memory configured with computer program code,
6 the computer program code configured to operate the data processing unit to
7 perform the method steps as recited in claim 1.

1 6. (Currently amended) A signal detection method comprising:
2 (a) receiving a transmitted signal as a received signal, the transmitted signal
3 comprising a first signal correlated with a pseudo-random number sequence, the first signal
4 representative of an information signal, the received signal comprising one or more reflected
5 signals and a line-of-sight signal;
6 (b) producing a matched signal from the received signal;
7 (c) correlating the matched signal with the pseudo-random number sequence to
8 produce a correlated signal, the correlated signal comprising a main lobe and a plurality of side
9 lobes;
10 (d) determining a peak value of the main lobe;
11 (e) determining a time value associated with the peak value of the main lobe;
12 (f) determining a threshold value based on the correlated signal; and

13 (g) if one of peak value of the main lobe and the plurality of side lobes exceeds
14 the threshold value ~~the threshold value exceeds a value based on the side lobes~~, then subtracting
15 a template signal from the correlated signal to produce a new signal and repeating the steps (c) -
16 (g) with the new signal, wherein the threshold value is recomputed with each iteration of the
17 steps (c) - (g),
18 wherein a plurality of time values are produced by the repetition of steps (c)-(g),
19 and
20 wherein the smallest of the time values represents the arrival time of the line-of-
21 sight signal.

1 7. (Original) The method of claim 6 wherein the first signal is the
2 information signal.

1 8. (Original) The method of claim 6 wherein the threshold value is based on
2 peak values of the side lobes.

1 9. (Original) The method of claim 6 wherein the threshold value is based on
2 a ratio between the peak value of the main lobe and a peak value of each side lobe.

1 10. (Currently amended) A signal detection processor comprising:
2 (a) means for receiving a digital signal, the digital signal representative of a
3 transmitted signal, the transmitted signal formed by correlating an information signal with a PN
4 sequence, the digital signal comprising one or more reflected signals and a line-of-sight signal;
5 (b) means for correlating the digital signal with the PN sequence to produce a
6 correlated signal;
7 (c) means for detecting a peak value in the correlated signal including associating
8 a time value representative of the position of the peak value in the correlated signal;
9 (d) means for determining a threshold value based on the correlated signal;
10 (e) means for producing a new correlated signal from the correlated signal; and

11 (f) means for repeating [[the]]a process performed by the means (b)-(e) using the
12 new correlated signal, if a comparison of the threshold value with the correlated signal produces
13 a first comparison result,
14 thereby accumulating a plurality of peak values~~[[.]]~~, and
15 wherein the smallest of the time values represents the arrival time of the line-of-
16 sight signal.

1 11. (Currently amended) The processor of claim 10 wherein each of the
2 recited means ~~[[are]]~~ is provided as computer program code.

1 12. (Currently amended) The processor of claim 10 wherein each of the
2 recited means ~~[[are]]~~ is performed on a data processing unit.

1 13. (Original) The processor of claim 10 wherein the means for determining a
2 threshold is based on peaks in the correlated signal exclusive of the detected peak value.

1 14. (Original) The processor of claim 10 wherein the means for producing a
2 new correlated signal includes subtracting a template signal from the correlated signal.